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ABSTRACT

The Cooperative Institutional Research Program (CIRP) database based on the American Freshmen Survey provides data for use in making marketing and management decisions in colleges and universities. This paper describes an operational cooperative model for managing and exploiting the data that CIRP makes available. The paper also offers an example of the substantive insights that can be derived from such cooperation. Additional sections: (1) provide a description of a project for sharing CIRP data among the members of an existing consortium, the institutions that are involved in the effort, and the student data in the resulting database; (2) discuss the scales used in the study constructed from the CIRP measures of social and political values and the creation of a general index of liberalism; (3) examine the differences among and within institutions on this index; (4) explore the characteristics of institutions that appear to contribute to differences in the social/political orientations of their freshmen classes; and (5) provide summary observations and suggestions for further research. Analysis suggested that various institutional characteristics and student academic orientations (i.e., intended major) are associated with measurable differences on an index of social/political liberalism. (GLR)

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Social/Political Liberalism Among Freshmen at Selective Private Institutions: a CIRP Data Sharing Project

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Paper distributed in conjunction with a panel presentation at the Annual Forum of the Association for Institutional Research

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This paper was presented at the Thirty-Third Annual Forum of the Association for Institutional Research held at the Chicago Marriott Downtown, Chicago, Illinois, May 16-19, 1993. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Jean Endo
Chair and Editor
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I. Introduction

The annual American Freshman Survey that is sponsored by the Cooperative Institutional Research Program (CIRP) can provide some powerful data for use in making marketing and management decisions in colleges and universities. One of the challenges that arises for any institution that participates in CIRP, however, is to keep from being overwhelmed by the sheer volume of the data that emerge from an administration of CIRP's Student Information Form. Another challenge is to obtain insights from these data on how an institution differs from others with which it competes or with which it would like to be compared. CIRP provides norms based on aggregated institutional data, but institutional comparisons are essential to an understanding of how the market is configured and how an individual institution is positioned in the market.

Our attention in this paper is directed to both of these issues through an examination of differences (and similarities) in the social and political attitudes of students who are attracted to institutions that are similar in many observable characteristics.[1] Certainly, students' attitudes will change to some extent during college, but the attitudes that people bring into an institution both contribute to the definition of its culture and help establish its place in the market. For high school students who are investigating colleges, the types of people with whom they will associate help to define a particular institution for

[1]Research similar to what we report here has also been conducted with the questions in the Student Information Form that ask about the personal goals of students (Brodigan and Litten, 1992).

them. Finally, in order to understand how different colleges affect students, and the outcomes that they produce, it is useful to know how colleges differ in the students they attract, and how differentiated colleges are, both across and internally within institutions.

This paper describes an operational cooperative model for managing and exploiting the data that CIRP makes available. We also explore an example of the substantive insights that can be derived from such cooperation. The first question we pose is "Do institutions that are similar in some critical respects (selective, high-priced) attract students who differ in their social and political values?" This is a question that can help the officials who are responsible for marketing a college determine where it is positioned in the marketplace and why students may be attracted to it (or deterred from it). The answer to this question can also help in understanding how student politics are played out on a given campus, and on different campuses. The second question we examine is "If the entering classes of different institutions do exhibit different goals and values, what are the characteristics of institutions that are associated with differences in the social/political values of their freshmen classes?" Again, the answer to this question can help an institution understand its place in the market. Finally, we address the question "How much diversity of social/political values exists within a given freshmen class and what institutional characteristics are associated with different amounts of such diversity?" This is an important question for any educator who believes, as we do, that exposure to different ideas and values is a valuable ingredient in an effective college education, and that exposure to diversity outside of the curriculum is an important component of a collegiate education. Most of the writing on diversity in academic institutions focuses

exclusively on racial and ethnic diversity. Unless the discussion is broadened to include diversity of values, beliefs, goals, and behaviors, however, we have failed to embrace fully the character and educational importance of diversity within a student body.

The remaining sections of the paper cover the following ground: II. A description of a project for sharing CIRP data among the members of an existing consortium, the institutions that are involved in the effort, and the students who are in the resulting database; III. Discussion of the scales that we constructed from the CIRP measures of social and political values and the creation of a general index of liberalism; IV. Examination of differences among and within institutions on this index; V. Exploration of the characteristics of institutions that appear to contribute to differences in the social/political orientations of their freshmen classes; VI. Some summary observations and suggestions for further research.

II. Consortial Data Sharing and the Resulting Data Set

The Consortium on Financing Higher Education (COFHE) consists of 32 members. All are private colleges and universities with relatively high tuition (and financial aid) levels; they also tend to be highly selective (that is, relatively low admission rates and/or high average SAT scores for their entering freshmen) and to draw students from broad geographic bases. They are spread throughout the United States, but are concentrated in the northeastern region of the country.

COFHE does a wide variety of research on behalf of its members. This ranges from gathering basic data on admissions, financial aid, and graduation rates from campus

officials to surveys of graduating seniors and alumni. COFHE's research staff consists of 2.5 professionals.

All but two of COFHE's members have participated in CIRP's freshman survey at some time; 17 were in the original set of participating institutions in 1966 and eight have participated in all 27 years. Beginning in 1991, COFHE obtained agreement from 19 of the 21 institutions that participated in that year to act as the distribution agent for the student-record data files that they obtain from CIRP. In 1992, a standing agreement to participate in the COFHE project was obtained from 20 of the 23 institutions that administered the Student Information Form.

CIRP sends each institution's data file to COFHE; we send them on to each institution. This slows the process down by a couple of weeks for the institution. It provides a marginal cost savings — there is a single charge for a disk from CIRP instead of a charge to each institution; per-student unit costs are not affected. COFHE passes on only the direct costs of the disk, split evenly among the institutions, plus the unit costs charged by CIRP. COFHE then assembles a consortial data file from the aggregated institutional data (minus individual student identification codes) and produces three norm reports — one each for the universities, the coeducational colleges, and the women's colleges. Institutions can also obtain student-record norm files for institutions of their own choosing. Such files must contain a minimum of three institutions and are provided without institutional identification codes. (A charge of $20 is made for such files; only 3-4 institutions have requested such a file each year.) COFHE staff also conduct ad hoc research with the aggregated file, providing the participants with reports and plots of

institutional scores on constructed indexes; the institutional data are coded so that each institution knows only its own code. The remainder of this paper contains an example of this type of consortial research.

The Institutions

COFHE's 1992 CIRP data set consists of 12,028 students from 20 institutions; institutional numbers range from 189 to 1,237. These sets of respondents represent from 37 to 100 percent of their institution's entering classes; 10 institutions obtained data from at least 85 percent of their freshmen; another five had response rates in the 60-84 percent range. The data set includes students from five women's colleges, seven coeducational colleges, and eight universities. Eighteen of these institutions are in the top 25 in their respective categories in the 1991 rankings of institutions published by *U.S. News and World Report*. Their admission rates range from 16 to 77 percent; the average verbal SAT scores of their entering students range from 535 to 650.

The Students

The average verbal SAT score reported by the entire sample of these students was 614; 42 percent reported an average high school grade of A or A+. Thirty nine percent reported family incomes of $100,000 or more. Ninety two percent aspired to degrees beyond the bachelor's level.

III. The Creation of Scales and Indexes for Analysis of Social/Political Values

CIRP's Student Information Form asks students to indicate their agreement or disagreement with 27 social or political statements; their answers are given via a four-point scale (strongly disagree, somewhat disagree, somewhat agree, and strongly agree).

Examples of these items are given in Table 1, slightly paraphrased. In order to work efficiently with these data we sought to reduce them to more manageable proportions. Via principal components factor analysis of the responses to these 27 statements, we identified six broad dimensions of social/political attitudes that are represented by these statements.[2] Table 1 lists the principal factors that we identified. The second column lists the specific attitudes that were most highly associated with each factor (the factor loading is shown in parentheses). We created scales for each factor by summing the ratings of each component attitude that loaded on a given factor at .50 or higher, and then dividing the sum by the number of component attitudes.[3] The last two columns in the table show the mean and standard deviation of the scales that we created by summing the ratings of the component attitudes.

On two of these scales — Consumer Protection and Gender Libertarian — the average rating of the component attitudes was between "somewhat" and "strongly agree" with the direction for the scale that we have called "liberal;" in fact, for the latter scale,

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[2]The sixth factor consisted of a single high-loading variable: grading in high schools has become too easy. We also examined an alpha extraction factor analysis. The same factors emerged from that effort.

Other approaches to reducing the massive number of variables in the CIRP database have been more eclectic in the array of variables that have been submitted to factor analysis (for example, see Astin, 1992). We prefer the interpretive tidiness that is afforded by concentrating on a particular type of measure.

[3]We reversed the ratings of three of the components for the Civil Libertarian factor and of both of the components in the Gender Libertarian factor in order to reflect a liberal orientation — e.g., "Too much concern for the individual" was recoded so that a high score was assigned to strong disagreement with this statement. To test the reliability of the scales, we subjected them to reliability analysis; we used Cronbach's alpha to determine whether our scales could be improved by the deletion of any of the components. The results of the reliability analysis did not indicate that modifications of their components would increase the reliability of any scale.

Table 1

Social and Political Attitudes of Entering Freshmen

Attitude Scale	Specific Components	Mean	Standard Deviation
Consumer Protection (12.3%)	Federal government not protecting consumer enough (.622)	3.13	.56
	Federal government not controlling pollution enough (.608)		
	National health care plan needed (.522)		
Civil Liberties (6.8%)	Too much concern for rights of criminals (.564) *	2.41	.64
	Abolish death penalty (.610)		
	Employers can require drug testing (.536) *		
	Control AIDS by mandatory testing (.500) *		
Gender Libertarian (5.8%)	Activities of married woman best confined to home/family (.597) *	3.53	.67
	Important to have laws prohibiting homosexual relations (.572) *		
Personal Libertarian (5.1%)	Abortion should be legal (.603)	2.65	.76
	Sex OK if people like each other (.716)		
	Marijuana should be legalized (.561)		
Affirmative Action (4.1%)	Busing is OK if it helps achieve racial balance (.587)	2.37	.69
	Give preferential treatment in admissions for disadvantaged (.648)		

Notes: Parentheses in this column show the percentage of variance explained by the factor (all variables)

Figures in parentheses in this column are factor loadings for specific components. An * indicates that the rating was reversed for scoring in a "liberal" direction.

4 = strongly agree with liberal direction

the average rating was closer to the "strongly agree" level in the liberal direction. For two scales — Civil Libertarianism and Affirmative Action — the average ratings of the component variables were closest to the point that marked moderate disagreement with the liberal position on the scale.

In order to gain an overview of how the entering freshmen classes of these selective institutions differ, if at all, we created a general liberalism scale for each student. Each of the five factor-based scales was standardized (so that the mean = 0; standard deviation = 1). The five standardized scales were then summed to create a liberalism scale. Values on the liberalism scale ranged from -12.8 to 8.9. We then created a Liberalism Index for each institution by calculating the average of the standardized liberalism scale scores of its students.

We were also interested in the heterogeneity of attitudes within these entering freshman classes. To examine this phenomenon we produced a measure of internal differentiation within a class by subtracting the institutional score on the Liberalism Index for the corresponding institution from each student's score on the liberalism scale and calculating the average of the absolute values of these remainders (v).[4] The heterogeneity of the social/political attitudes of an institution's freshman class was calculated by

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[4]Our measure of variation is the absolute value of $v = (L_i - l_x)$, where L is the score for institution *i* on the Liberalism Index and l is the score for individual *x* on the standardized liberalism scale (produced by summing the standardized scores for the five component scales). The Diversity Index for each institution *i* is $(\Sigma v_{ij})/n_i$.

averaging the values of v for each institution; we called this measure of institutional variation in liberalism scores the Diversity Index.[5]

IV. Differences and Similarities Among Institutions

The average institutional scores on the Liberalism Index ranged from -1.39 to 1.84. Figure 1 shows how many of these institutions have freshmen classes that differ at a statistically significant level on this measure of liberal social and political attitudes.[6] Each asterisk indicates a pair of institutions for which their average scores on the Liberalism Index are significantly different at the .05 level. Of the 190 possible pairs of institutions that can be tested for significant differences, almost one-half (84) were different at this level of statistical significance. The freshmen classes at the two most liberal institutions were distinctively more liberal than the classes at 12 of the institutions at the other end of the spectrum; the least liberal institution differed significantly from 13 of the institutions at the liberal end.

Figure 2 shows that these individual institutions do not differ much with respect to internal diversity, even though the general social/political tone of these freshman classes does differ considerably. Only three pairs of institutions were distinctively different on this measure of diversity of social/political attitudes.

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[5]The higher the value of these remainders, the greater the diversity of social/political values represented in the class (as measured by this Liberalism Index).

[6]We used the Scheffé test in the Oneway procedure of SPSS to test the statistical significance of differences between pairs of institutions in this set.

Figure 1

Significant Differences in the Liberalism Index Among 20 Institutions

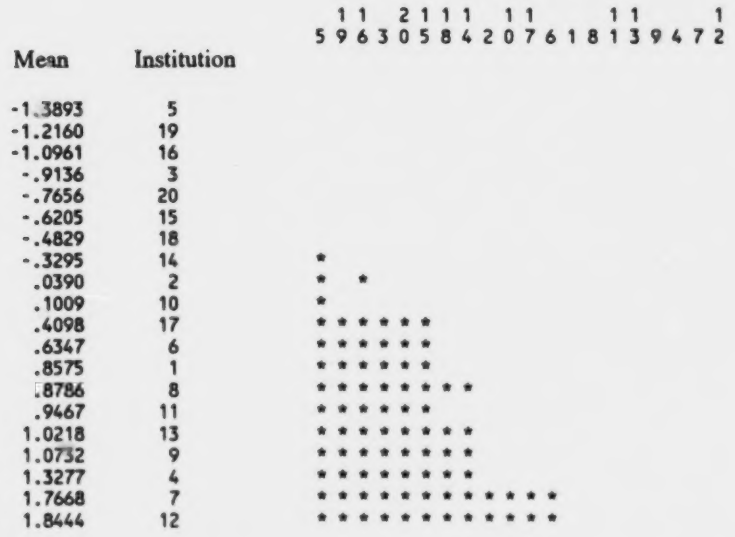
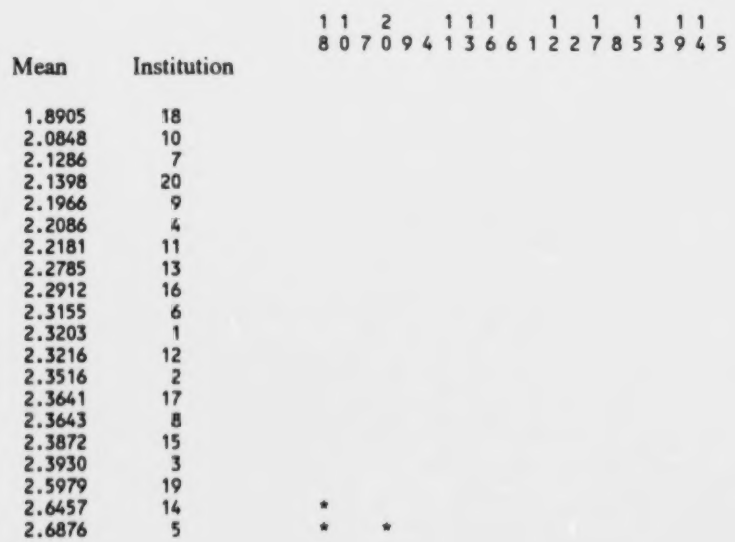


Figure 2

Significant Differences in the Diversity Index Among 20 Institutions



V. Institutional Characteristics Associated with Liberalism and with Diversity

Do different types of institutions enroll freshmen classes that exhibit notably different social/political values or different degrees of diversity? We pursued our exploration of meaningful differences in freshmen cultures by looking at the characteristics of institutions that might be associated with relative levels of liberalism and with internal diversity as measured by this index. We looked at characteristics of the institution (e.g., selectivity, location) and at characteristics of the entering class (e.g., ability levels, religious preferences, family background, chosen majors). The particular measures that we examined are listed in Table 2, along with the range of values and the value at median institution for each measure.

Five institutional characteristics are very strongly associated with the degree of liberalism that freshmen exhibit: positive associations exist for the percentage of freshmen who report no religious preference, the percentage who plan a major in the arts or humanities, and the percentage who are undecided about a major; freshmen at the colleges were markedly more liberal than freshmen at the universities; and freshmen at southern institutions were less liberal than freshmen at institutions outside of the South. It is not easy to identify empirically which of these institutional characteristics might be causative in attracting students with liberal orientations because, with one exception, these five characteristics exhibit intercorrelations that are .50 or higher.[7]

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[7]Only "percentage undecided about major" and "percentage planning an arts or humanities major" are not correlated this highly.

Table 2

Listing of Institutional Characteristics Used for Analysis

Characteristic	*Median*	*Range (or number)*
Freshman class size	629	272 - 1,626
Percent women	53%	37 - 100%
Percent Asian	12%	6 - 34%
Percent black	5%	2 - 9%
Percent Hispanic	5%	2 - 8%
Percent white	71%	48 - 87%
Admission rate	42%	16 - 77%
Matriculation (yield) rate	40%	24 - 56%
Average verbal SAT score	610	535 - 650
Average math SAT score	652	560 - 700
Average high school grade point average	3.67	3.33 - 3.87
Student budget (tuition, fees, room, board, expenses)	$24,239	$15,800 - $25,520
Percentage of admission applicants who applied for financial aid	62%	37 - 75%
Percentage of freshmen on financial aid	49%	33 - 69%
Average family income*	$95,868	$64,114 - 114,009
Percentage of fathers with college degrees	82%	71 - 88%
Percentage of fathers with advanced degrees	55%	40 - 68%
Percentage of mothers with college degrees	73%	56 - 84%
Percentage of mothers with advanced degrees	34%	24 - 48%
		Table continued on next page

*Calculated from the mid-points of the ranges on the Student Information Form, with the lowest range (Less than $6,000) set at $6,000 and the highest range ($200,000) set at $200,000.

Table 2, continued		
Characteristic	*Median*	*Range (or number)*
Percent Baptist	3%	1 - 11%
Percent Roman Catholic	19%	8 - 51%
Percent Jewish	10%	3 - 24%
Percent no religious affiliation	30%	15 - 43%
Percent business major	3%	0 - 22%
Percent engineering major	3%	0 - 31%
Percent art or humanities major	21%	8 - 48%
Percent natural science major	21%	8 - 31%
Percent social science major	20%	8 - 33%
Percent undecided about major	14%	6 - 22%
University (versus college)		8 institutions
Urban		8
Rural		6
Suburban		6
New England		7
Mid-Atlantic		6
Southern		4
Other region		3

Diversity of social/political orientation in a freshman class is negatively correlated in this sample of institutions with the amount of liberalism in the class ($r = -.37$), but the relationship is not statistically significant. Only one institutional characteristic is as highly correlated with diversity of social/political attitudes in the freshman class as the five characteristics noted above are with the level of liberalism — the percentage of minority

Table 3

Correlations of Liberalism and Diversity Indexes with Institutional Characteristics

Characteristic	*Liberalism*	*Diversity*
Freshman class size	-.46*	.14
Percent women	.34	-.25
Percent Asian	-.16	.69**
Percent black	-.10	.32
Percent Hispanic	.09	.25
Percent white	.09	-.73†
Admission rate	.30	-.52*
Matriculation (yield) rate	-.08	.26
Average verbal SAT score	.08	.52*
Average math SAT score	-.26	.53*
Average high school grade point average	-.20	.56**
Student budget	.27	-.20
Percentage of admission applicants who applied for financial aid	.26	.06
Percentage of freshmen on financial aid	.21	-.42
Average family income	-.22	.23
Percentage of fathers with college degrees	.11	.23
Percentage of fathers with advanced degrees	.34	.22
Percentage of mothers with college degrees	.31	.22
Percentage of mothers with advanced degrees	.60**	.05
	Table continued on next page	

* Significant at .05 level
**Significant at .01 level
† Significant at .001 level

Table 3, continued		
Characteristic	*Liberalism*	*Diversity*
Percent Baptist	-.63**	.47*
Percent Roman Catholic	-.59**	-.18
Percent Jewish	.29	.08
Percent no religious affiliation	.81†	.02
Percent business major	-.44*	.01
Percent engineering major	-.66**	.62**
Percent art or humanities major	.78†	-.35
Percent natural science major	-.06	.03
Percent social science major	.13	-.25
Percent undecided about major	.68†	-.48*
University	-.72†	.52*
Urban	-.50*	.29
Rural	.57**	-.35
Suburban	-.03	.04
New England	.28	-.51*
Mid-Atlantic	.01	.12
South	-.69†	.50*
Other region	.39	-.03

students in the freshman class increases the amount of diversity in the social/political values of the class. Other characteristics that exhibit a more modest relationship with diversity that are still significant at a relatively high level include: admissions selectivity (the more selective, the more diverse), ability levels of the entering freshmen (higher student ability means more diversity), and the percentage of engineering students (the

presence of engineers introduces diversity in social/political values). The universities tended to have more diversity in the social/political values of their freshmen than the colleges did, as did institutions in the South (compared with those elsewhere).[8] Institutions in New England tended to be relatively less diverse by this measure than institutions located elsewhere.

VII. Summary

COFHE's CIRP project has provided enhanced perspectives on the data that emerge from the American Freshmen Survey at no additional cost to the participating institutions (indeed, with minor cost savings for the participating institutions), and with minimal cost to the consortium. With two years of experience, only a small number of institutions have taken full advantage of the variety of additional analytic resources that the consortial effort makes possible. The staff of the consortium has proposed to the membership that we sponsor a conference to explore how these data are being used on campus and to discuss the development of more effective consortial activities in this arena. Such a conference would give institutions an opportunity to learn from peer institutions how CIRP data are analyzed, reported, and used on the campuses where they have been exploited most effectively. We would also hope to obtain suggestions for more effective analysis and presentation of consortial and comparative institutional data by the COFHE staff.

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[8]Recall that a strong correlation exists in this sample of institutions between being a university and being in the South.

Substantively, the project has provided some interesting perspectives on the differences and similarities among selective private institutions. Via factor analysis, the large array of data generated by a single question in the American Freshmen Survey has been reduced to more manageable and meaningful scales, and a useful summary index can be created from these scales. The question on social and political attitudes or values produced five multiple-attitude factors.

Institutions that occupy a distinctive niche in the overall spectrum of American higher education and which are similar on some characteristics that are frequently used to classify colleges and universities (control, selectivity, cost) can differ significantly in the social and political orientations of the freshmen that they attract. Several highly inter-related institutional characteristics and academic orientations (i.e., intended major) of entering freshmen are associated with measurable differences on an index of social/political liberalism among different freshmen classes. Because of the inter-relationships among institutional characteristics, however, it is difficult to determine whether institutional type, location, program offerings, or religious preferences of entering freshmen are most influential in shaping the social/political culture of an institution as it is exhibited in (and affected by) the values of entering students. Perhaps research that uses individual students as the unit of analysis could help untangle some (but not all) of these phenomena. Certainly research with a wider (or different) set of institutions could help clarify some of these relationships; we suspect that the differences that we observed within this set of similar institutions are even greater when these institutions are compared with others in

the diverse American system of higher education. And some good theory would also help advance our understanding of these phenomena.

At the institutional level, we discovered that the amount of internal diversity in social/political values is not significantly different for most of these individual institutions. Certain characteristics are associated with greater levels of internal diversity, however. The presence of relatively large numbers of minority students increases the diversity of social and political values within a freshmen class. Although freshman class size is not related to such diversity, universities did exhibit greater levels of diversity than the colleges. These universities also have other characteristics that are associated with diversity, however — they are more likely than the colleges to be in the South, to have relatively large numbers of engineering majors and large numbers of Baptists.

Some interesting questions are suggested by this type of research. The internal diversity issue needs to be explored further. Do students in the most diverse institutions come into contact with students who have distinctly different social or political orientations, or do similar students cluster in smaller relatively homogeneous groups when there is sufficient critical mass to do so? The fact that the presence of minority students is one of the principal sources of diversity in values suggests that the lack of inter-racial mixing that occurs on many campuses might impede the development of groups where this diversity plays an effective educational role. Likewise, the prominence of intended major as a source of differing social/political orientations suggests that some isolation of students with distinctive values may occur once majors are declared. Finally, if students are indeed

exposed to other students with different values, does this type of diversity produce any educational benefits (value clarification, etcetera)?

COFHE has not engaged in any longitudinal research involving these measures, although the consortium does have a tradition of surveying graduating seniors and alumni. In our future endeavors of this latter sort, we will need to decide whether closer linkages to freshman data would permit the effective examination of change at both the individual and the class level.

These data also indicate that it would be useful for CIRP to report institutional scores (and norms) for summary indexes that synthesize the voluminous data that emerge from the Student Information Form. Either the eclectic model of data reduction advanced by Astin or the more focused approach that we used could help institutions wade through this enormous volume of data.

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